

**Statement of Mack McFarland, Ph.D.**  
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**E.I. DuPont de Nemours and Company, Inc**  
**before the**  
**Committee on Science**  
**U.S. House of Representatives**  
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Good morning Chairman Boehlert, Mr. Gordon, and members of the committee. My name is Mack McFarland, and I am the Global Environmental Manager for DuPont's fluorochemicals business. In that role I advise our worldwide operations on a range of environmental and business matters. I appreciate this opportunity to share our experiences regarding greenhouse gas emission reductions with you.

DuPont is a science driven company with a commitment to safety, health and environmental protection. We use science to derive products and services that improve the quality and safety of people's lives. We also use science to drive how we develop, manufacture and manage our products throughout their life cycle. As a 200 year old company we take the long view, and strive for sustainable growth that benefits our shareholders, the societies in which we operate and the global environment. It is that commitment to sustainable growth and dedication to science that underpins our approach to global climate change and greenhouse gas emissions reductions.

Our experience with greenhouse gas reductions actually began with another global environmental issue; stratospheric ozone depletion. DuPont developed the first fluorochemical refrigerant gases, chlorofluorocarbons, or CFCs, in the 1930s. They were developed as safe alternatives to the more dangerous refrigerants then in use, such as ammonia. In the 1970s when it was proposed that CFCs might deplete stratospheric ozone DuPont delved into the science. In 1988, based on the scientific consensus presented in the International Ozone Trends Panel Report, and our evaluation of that science, we voluntarily and unilaterally committed to phase out CFCs. We also used our science capabilities to lead in the development of alternative products to meet the growing societal need for air conditioning and refrigeration. This experience with the CFC/ozone issue provided us with a keen understanding of the implications of environmental issues that are global in scope and decades to centuries in duration.

Global climate change was a natural extension of this experience. With the beginning of negotiations for the UN Framework Convention on Climate Change we again delved into the science. We concluded that the scientific consensus, while imperfect, was certainly sufficient to indicate a legitimate issue.

In 1991 we took a hard look at our own greenhouse gas emissions and realized that they were not insignificant. While we recognized that it would take concerted global action across all economic sectors to address global climate change, we determined that we

needed to take responsible action to be part of the solution, and to reduce our own emissions “footprint.” The largest contributors to our footprint were unintended by-product emissions associated with manufacture of a key raw material for nylon and with manufacture of a fluorochemicals refrigerant; nitrous oxide from our nylon plants and trifluoromethane or HFC-23 from some of our fluorochemical plants. Both have significant global warming potentials.

We set aggressive goals to reduce our global greenhouse gas emissions by 40% on a carbon-equivalent basis by the year 2000, using 1990 as a base year, with most of our actions targeted at nitrous oxide and HFC-23. We built a detailed inventory of our global emissions and a system to search out the lowest cost emissions reductions in our global operations, as well as a system to track and publicly report our ongoing emissions. We also set goals to address carbon dioxide emissions from energy use, aiming to keep energy use flat even as production grew.

We recognized that this was a significant undertaking that needed to be done in as flexible and cost effective a manner as possible. This, of course, is as true for a national or global program as it is for a single company’s actions. The by-product emissions were reduced both by traditional abatement technologies and, more importantly, by changing our manufacturing processes to avoid producing them in the first instance. We pursued our energy goals through a wide variety of large and small projects, including everything from expanding our use of highly efficient cogeneration to changing light bulbs in our offices.

So, how have we done against these goals? By the year 2000, we exceeded our original goals globally. In 1999, with our 2000 goals in sight and the scientific case for climate change continuing to strengthen, we reaffirmed our commitment to action on greenhouse gases and set aggressive new goals for the year 2010.

- First, we committed to reduce our global carbon-equivalent greenhouse gas emissions by 65 percent using 1990 as a base year (vs. our original 40% goal).
- Second, we committed to continue to hold our global energy use flat using 1990 as a base year. The achievement of this goal will require that our business growth be much less raw material and energy intensive than in the past – a move that is very consistent with our overarching goals of sustainable growth.
- Third, we have committed to acquiring 10 percent of our global energy use in the year 2010 from renewable resources. We want to show that we are serious about the need for renewable energy to be a part of our future. We also want to indicate that we are prepared to work with energy suppliers and others to develop a robust renewable energy market.

We have been making steady progress on our 2010 goals. Through a technology breakthrough in our fluorochemical operations, we have reduced our global carbon-equivalent emissions by over 72%. We also continue to hold our energy use flat while our global production has grown over 30% since 1991. This has resulted in a reduction of 420 million cumulative metric tons of greenhouse gas emissions from our global

operations versus business as usual. We are also making solid progress in meeting our renewable energy goal with about 5% of our current energy use from renewable resources such as wind, hydropower and landfill gas.

In 2004 we divested our nylon business and we are now in the process of recalculating our goals by subtracting the emissions of that business from both our 1990 baseline and from the emissions for subsequent years. We will of course make the recalculated goals public.

Let me share with you a few of the things we have learned from our experience with reducing greenhouse gas emissions.

- First, these kinds of reductions are not a simple matter and have economic ramifications. We have spent over \$50 million dollars in our efforts to reduce nitrous oxide and HFC-23, as well as spending on energy efficiency projects.
- That leads me to a happier second key learning – the sort of programmatic actions necessary to address greenhouse gases can lead to unexpected benefits. Our hold-energy-use-flat goal has helped us to focus effort on energy savings activities and projects that might not have otherwise risen far enough up on our capital spending priorities to have been pursued. The result? We have saved over \$2 billion dollars on energy costs since 1991, and this is the “gift that keeps on giving” in ongoing operating cost savings.
- Third, as various greenhouse gas emissions policy regimes develop around the world there seems to be little effort to take account of the actions of early movers like ourselves. This can place the early movers at a competitive disadvantage and act as a disincentive to other entities to step up with bold voluntary actions.

In conclusion:

- We determined that enough is known about global climate change to provide a basis for concern and warrant prudent action on our part;
- We have set and achieved aggressive greenhouse gas emissions reduction goals that while costly to pursue, have created an overall cost savings for the company due to reduced energy use;
- Climate change is clearly both an environmental and economic challenge and must be addressed with both of these aspects in mind.

Thank you. I will be happy to answer any questions.